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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/240,524	01/29/1999	ROBERT JAMES GERNDT	KCC-14-026	7431
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PAULEY PETERSEN & ERICKSON 2800 WEST HIGGINS ROAD HOFFMAN ESTATES, IL 60195			EXAMINER CIRIC, LJILJANA V	
			ART UNIT	PAPER NUMBER

3753

DATE MAILED: 04/26/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/240,524

Applicant(s)

GERNDT ET AL.

Examiner

Ljiljana (Lil) V. Ciric

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 March 2004 and 21 January 2005.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-25 is/are pending in the application.
- 4a) Of the above claim(s) none is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-25 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 29 January 1999 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

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DETAILED ACTION

Response to Applicant's Replies

1. This Office action is in response to the Appeal Brief filed on March 25, 2004 and to the Petition to Revive Unintentionally Abandoned Application under 37 CFR 1.137(b) filed on January 21, 2005.
2. Claims 1 through 25 remain in the application.
3. In view of the Appeal Brief filed on March 25, 2004 and of the petition filed on January 21, 2005, PROSECUTION IS HEREBY REOPENED. The various objections and rejections are set forth below.

To avoid abandonment of the application, appellant must exercise one of the following two options:

(1) file a reply under 37 CFR 1.111 (if this Office action is non-final) or a reply under 37 CFR 1.113 (if this Office action is final); or,

(2) initiate a new appeal by filing a notice of appeal under 37 CFR 41.31 followed by an appeal brief under 37 CFR 41.37. The previously paid notice of appeal fee and appeal brief fee can be applied to the new appeal. If, however, the appeal fees set forth in 37 CFR 41.20 have been increased since they were previously paid, then appellant must pay the difference between the increased fees and the amount previously paid.

A Supervisory Patent Examiner (SPE) has approved of reopening prosecution by signing below:



GENE MANCENE
SUPERVISORY PATENT EXAMINER
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Response to Arguments

4. Applicant's arguments with respect to claims 1 through 25 as filed in the Appeal Brief filed on March 25, 2004 have been considered but are moot in view of the new ground(s) of rejection.

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Nevertheless, the examiner wishes to respectfully remind Applicant that claims in a pending application should be given their broadest reasonable interpretation. *In re Pearson*, 181 USPQ 641 (CCPA 1974).

In view of the above, and since Scannell is now being used as the base reference in a rejection of the claims under 35 U.S.C. 102(b), it is hereby noted that, as broadly interpreted as required and in view of the indefiniteness of the claim language as explained in greater detail below, Scannell indeed does disclose a passage extending between the inlet and the outlet ends of the roller, at least as broadly interpreted as required. See column 4, lines 49-55, and also column 5, lines 57-61, of Scannell.

In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., ***) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

In response to applicant's argument that the Scannell reference fails to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., there being more than one hole per channel in fluid communication with the axial bore; the channels minimizing the distance between adjacent channels as the channels approach the annulus to maintain a substantially even fluid discharge around the circumference of the annulus) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

In response to applicant's argument that Scannell discloses outlet holes 44 which are narrower than the respective inlets of the corresponding channels, it is noted that the instant invention also has narrower outlet holes 35 which are narrower than the respective inlets of the corresponding channels 46. If the latter fact does not preclude applicant from claiming progressively widening channels (and it should

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not, since the channels 46 of the instant invention do progressively widen), then the former should also not be interpreted as precluding similarly shaped channels in Scannell from reading on the channels of the instant invention as claimed.

Terminal Disclaimer

5. The terminal disclaimer filed on January 21, 2005 has been reviewed and is accepted. The terminal disclaimer has been recorded.

Drawings

6. The drawings filed on January 29, 1999 are objected to because the character of the lines, numbers, and letters appearing in Figures 1 through 3 is generally not uniform and not of sufficient quality. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are *required* in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

7. The proposed drawing corrections were received on April 17, 2001. These drawings have previously been approved, and the corrections must be incorporated in the corrected drawing sheets which are required in response to this Office action as noted in greater detail above.

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Specification

8. The disclosure is objected to because of the following informalities: the terms “an inlet end of the thermal transfer roller” and “a outlet end of the thermal transfer roller” as used in the specification appear to differentiate the inlet end of the thermal transfer roller from the outlet end of the same by implying that the (fluid) inlet of the thermal transfer roller is on one end of the roller and that the (fluid) outlet of the thermal transfer roller is on another end of the roller. However, the specification and drawings (i.e., Figure 2) show that the fluid enters the thermal transfer roller via inlet 26 and exits via outlet 44 which are coaxial to each other and which both have a corresponding opening on one and the *same* end of the thermal transfer roller; based on the fluid inlet 26 and the fluid outlet 44 being on one and the *same* end of the thermal transfer roller, it appears self-contradictory and confusing to refer to element 21 as the *inlet* end of the thermal transfer roller and to element 22 as the *outlet* end of the thermal transfer roller. It is recommended that the term “inlet end” as used to refer to element 21 be replaced with another term, such as “first end”, and that the term “outlet end” as used to refer to element 22 be replaced with another term, such as “second end” in order to avoid confusion.

Appropriate correction is required.

Claim Objections

9. Claims 22 through 25 are objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. Each of claims 22 through 25, while appearing to be dependent from a previously recited claim, is broader and not narrower than the respective claim from which it depends.

10. Claims 1 through 13 are objected to because of the following informalities: “at least *an* inlet end chamber” [claim 1, line 5] should be replaced with “at least *one* inlet end chamber” for improved readability and grammatical correctness; “10” [claim 5, line 2; claim 10, line 2] should be written out in

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full as “ten”; “20” [claim 6, line 2; claim 11, line 2] should be written out in full as “twenty”; and, “30” [claim 7, line 2; claim 12, line 2] should be written out in full as “thirty”—all for improved readability.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

11. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

12. Claims 1 through 25 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

[Note: The claims appearing in Appendix A of the Appeal Brief filed on March 25, 2004 are the basis for citing particular line numbers, etc., in the rejections appearing below.]

There is insufficient antecedent basis in the claims for the following limitations in the claims, for example: “*an inlet end* of the thermal transfer roller” [claim 1, line 8; claim 14, line 5; claim 20, line 11]—note that the thermal transfer roller does NOT inherently have an inlet end; “*an outlet end* of the thermal transfer roller” [claim 1, lines 8-9; claim 14, line 12; claim 20, lines 11-12]—again, note that the thermal transfer roller does NOT inherently have an outlet end; “*10 of the inlet channels*” [claim 5, line 2; claim 10, line 2]; “*20 of the inlet channels*” [claim 6, line 2; claim 11, line 2]; “*30 of the inlet channels*” [claim 7, line 2; claim 12, line 2]; “*an outer cylindrical shell*” [claim 20, line 4]; and, “*an inner cylindrical shell*” [claim 20, line 5].

Furthermore, the terms “an inlet end of the thermal transfer roller” and “a outlet end of the thermal transfer roller” as used in the claims appear to differentiate the inlet end of the thermal transfer roller from the outlet end of the same by implying that the (fluid) inlet of the thermal transfer roller is on one end of the roller and that the (fluid) outlet of the thermal transfer roller is on another end of the roller. However, the specification and drawings (i.e., Figure 2) show that the fluid enters the thermal transfer

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roller via inlet 26 and exits via outlet 44 which are coaxial to each other and which both have a corresponding opening on one and the same end of the thermal transfer roller; based on the fluid inlet 26 and the fluid outlet 44 being on one and the *same* end of the thermal transfer roller, it appears self-contradictory and confusing to refer to element 21 as the *inlet* end of the thermal transfer roller and to element 22 as the *outlet* end of the thermal transfer roller, causing further indefiniteness. It is recommended that the term “inlet end” as used to refer to element 21 be replaced with another term, such as “first end”, and that the term “outlet end” as used to refer to element 22 be replaced with another term, such as “second end”.

As written, the limitations “wherein each inlet channel becomes progressively wider *along a plane which includes a circumference of the inlet end chamber* between the first end and the second end thereof” [claim 1, lines 13-15] do not clearly set forth the metes and bounds of protection sought by claim 1 and claims 2 through 13 depending therefrom. In particular, the location of the plane as recited in the abovementioned limitations is not clearly set forth. For example, as written, it is not clear whether these limitations are intended to recite that (a) the plane includes a circumference of the inlet end chamber and is disposed between the first end and the second end of the inlet chamber, or that (b) the circumference which is included in the plane is disposed between the first and second ends of the inlet chamber, or that (c) the plane includes a circumference of the inlet chamber and is disposed between the first end and the second end of each inlet channel, or that (d) the circumference which is included in the plane is disposed between the first and second ends of each inlet channel, thus rendering indefinite claim 1 and all claims depending therefrom.

Similarly, the limitations “wherein each inlet channel becomes progressively wider *along a plane which includes a circumference of the inlet end chamber* between the narrower end and the wider end thereof” [claim 14, lines 9-11] and “wherein each outlet channel becomes progressively wider *along a plane which includes a circumference of the outlet end chamber* between the narrower end and the wider

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end thereof" [claim 14, lines 16-18] are similarly indeterminate with regard to the scope of protection sought, thus in turn rendering indefinite claim 14 and claims 15 through 19 depending therefrom.

The term "at least *about*" in each of claims 5 through 7 and in each of claims 10 through 12 as written is a relative term which renders the claims indefinite. The term "at least *about*" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. Thus, as used to define the number of channels in each of the inlet end and outlet end chambers, respectively, this term renders the claims indefinite with regard to the metes and bounds of protection sought thereby.

The above is an indicative, but not necessarily an exhaustive, list of 35 U.S.C. 112, second paragraph, problems. Applicant is therefore advised to carefully review all of the claims for additional problems. Correction is required of all of the 35 U.S.C. 112, second paragraph problems, whether or not these were particularly pointed out above.

Claim Rejections - 35 USC § 102

13. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

14. As best can be understood in view of the indefiniteness of the claims, claims 1, 3, 4, 13, 20, and 22 are rejected under 35 U.S.C. 102(b) as being anticipated by Köbler.

Köbler discloses a thermal transfer roller essentially as claimed, including, for example: an outer shell or jacket 5; an inner shell or body 6 coaxially positioned within the outer shell or jacket 5 to define a continuous annulus or chamber 19 between the inner surface of the outer shell or jacket 5 and the outer surface of the inner shell or body 6 [see column 2, lines 40-44], the annulus or chamber 19 comprising at least one spiral channel formed by deformations 16 or projecting vanes 16' [see column 2, lines 49-51]; at

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least an inlet chamber or turbulence eliminating chamber 21 in fluid communication with the annulus or chamber 19; a passage or hollow shaft 9 in communication with the annulus or chamber 19 via openings 21', the passage extending between the two ends of the thermal transfer roller [see Figure 1]; a plurality of inlet channels formed by guide vanes or baffles 22 disposed on an insert or plate 15 in the inlet chamber or turbulence eliminating chamber 21, each inlet channel having a first end closer to the passage or hollow shaft 9 and a second end closer to the annulus or chamber 19 [see Figure 2], wherein each inlet channel becomes progressively wider between its first and second ends [also see Figure 2]. Drive wheel 7 is readable on the second roller as recited in claim 22 of the instant application.

The reference thus reads on the claims.

15. Alternately for claims 1, 3, 4, 13, and 20, and as best can be understood in view of the indefiniteness of the claims, claims 1 through 4, 8, 9, 14, and 18 through 21 are rejected under 35 U.S.C. 102(b) as being anticipated by Scannell.

Scannell discloses a thermal transfer roller essentially as claimed, including, for example: an outer shell 18; an inner shell or inner tubular body 12 coaxially positioned within the outer shell 18 to define a continuous annulus between the inner surface of the outer shell 18 and the outer surface of the inner shell or body 12 [see Figure 2, for example], the annulus comprising at least one spiral channel 19 formed by spiral ribs 14 [see column 4, lines 12-17]; at least an inlet or end chamber 20' [see the embodiment of Figure 5, for example] in fluid communication via holes 44' with the annulus corresponding to channels 19; a passage formed at least in part by hollow shaft 78 in fluid communication with the annulus corresponding to channels 19 [see column 4, lines 49-55; also column 5, lines 57-61], the passage extending at least in part between the two ends of the thermal transfer roller along axis 42 [see Figure 2]; a plurality of inlet channels formed by radial spacers or walls or baffles 74a-f positioned within the inner and outer plates 70 and 72 forming the "insert" or chamber 20' [see column 5, lines 53-57; also see Figure 5], each inlet channel having a first end closer to the passage 80 or hollow shaft 78 and

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a second end closer to the annulus formed by channels 19 [see Figure 5], wherein each inlet channel formed by radial spacers or walls or baffles 74a-f becomes progressively wider between its first and second ends [also see Figure 5]. Scannell discloses the inlet and outlet or end chambers 20 or 20' or 20'' as being substantially identical [see column 4, lines 18-19].

The reference thus reads on the claims.

Claim Rejections - 35 USC § 103

16. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

17. As best can be understood in view of the indefiniteness of the claims, claims 5 through 7 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Köbler.

As discussed in greater detail above, Köbler discloses a thermal transfer roller essentially as claimed, including a plurality of inlet channels formed by guide vanes or baffles 22 disposed on an insert or plate 15 in the inlet chamber or turbulence eliminating chamber 21. Köbler, however, does not disclose there being at least 10 or at least 20 or at least 30 such inlet channels as recited in claims 5 through 7 nor there being more than one such roller as recited in claim 23. Nevertheless, mere duplication of parts has no patentable significance unless a new and unexpected result is produced. See *In re Harza*, 274 F.2d 669, 124 USPQ 378 (CCPA 1960). There is no mention of new and unexpected results associated with the duplication of either inlet channels or of thermal transfer rollers in the instant application.

Thus, it would have been obvious to one skilled in the art at the time of invention to modify the thermal transfer roller of Köbler to specifically include at least 10 or at least 20 or at least 30 inlet

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channels in order to optimize turbulence elimination for a particular system application, or to provide plural thermal transfer rollers in order to provide the necessary system capacity for a given application.

18. Alternately for claims 5 through 7 and 23 and as best can be understood in view of the indefiniteness of the claims, claims 5 through 7, 10 through 12, and 22 through 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Scannell.

As discussed in greater detail above, Scannell discloses a thermal transfer roller essentially as claimed, including a plurality of inlet and outlet channels formed by radial spacers or walls or baffles 74a-f positioned within the inner and outer plates 70 and 72 forming the "insert" or chamber 20'. Scannell, however, does not disclose there being at least 10 or at least 20 or at least 30 such inlet or outlet channels as recited in claims 5 through 7 and in claims 10 through 12 nor there being more than one such roller as recited in claims 22 through 25. Nevertheless, mere duplication of parts has no patentable significance unless a new and unexpected result is produced. See *In re Harza*, 274 F.2d 669, 124 USPQ 378 (CCPA 1960). There is no mention of new and unexpected results associated with the duplication of either inlet channels or of thermal transfer rollers in the instant application.

Thus, it would have been obvious to one skilled in the art at the time of invention to modify the thermal transfer roller of Scannell to specifically include at least 10 or at least 20 or at least 30 inlet and/or outlet channels in order to optimize descaling for a particular system application, or to provide plural thermal transfer rollers in order to provide the necessary system capacity for a given application.

Conclusion

19. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

20. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ljiljana (Lil) V. Ciric, whose telephone number is (571) 272-4909.

While she works a flexible schedule that varies from day to day and from week to week, Examiner Ciric may generally be reached at the Office during the work week between the hours of 10

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a.m. and 6 p.m. ET.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gene Mancene, can be reached at (571) 272-4930.

lvc

April 16, 2005



LJILJANA V. CIRIC
PRIMARY EXAMINER
ART UNIT 3753